



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,760	09/17/2003	Kiyoshi Fukuzawa	8012-1211	3837

466 7590 02/27/2006

YOUNG & THOMPSON  
745 SOUTH 23RD STREET  
2ND FLOOR  
ARLINGTON, VA 22202

EXAMINER

DANIELS, MATTHEW J

ART UNIT	PAPER NUMBER
----------	--------------

1732

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/663,760

Applicant(s)

FUKUZAWA ET AL.

Examiner

Matthew J. Daniels

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 8-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 21-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Information Disclosure Statement*

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 2, 3, 6, and 21-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hyman (USPN 2445579) in view of Signaigo (USPN 2444712), Sakamaki (US Patent Application Publication 2002/0008840), and Nichols (USPN 3254148). **As to Claim 1**, Hyman teaches an orienting method for an optical polymer film, the film passing through a processing bath containing a fluid (Fig. 1, Item 16), and removing the fluid which exists on the polymer film by using a draining member upon leaving the processing bath (Fig. 1, Item 18). Hyman is silent to a) orienting the film after passing through the processing bath, b) draining within 10 seconds

Art Unit: 1732

of leaving the processing bath, and c) the tenter apparatus. However, these aspects are prima facie obvious for the following reasons:

a) Signaigo teaches orienting after passing through at least one processing bath containing a fluid (2:1-7).

b) One of ordinary skill would have found it prima facie obvious to wipe the sheet as soon after the processing bath of Hyman as possible in order to minimize the amount of excess iodine on the surface of the sheet (2:46-48). One would have been motivated to do so because iodine in the surface of the sheet is found to cause a darkening result when exposed to the boric acid solution (See Hyman's "darkening result" 4:13, and also 4:1-46). Additionally, Hyman teaches that after the washing step (item 25 in the figure), the sheet should be dried in any desirable way, such as by wiping or exposure to air (3:14-26), which appears to suggest a drying step immediately after the washing bath and prior to rolling of the film.

c) Sakamaki teaches a stretching method for a polarizing film using a tenter apparatus, but appears to be silent to the clips. However, Nichols teaches (Figs. 1-3) the conventional aspects of a tenter apparatus, namely a plurality of clips movable in a closed and open direction, the clips gripping a lateral edge of a polymer film, releasing when moving in an open direction, first and second movement means oppositely disposed, the respective endless moving means holding the clips at predetermined intervals and moving at a constant speed, first and second rails to form a conveyance passage defining a movement locus (inherent).

It is noted that Sakamaki and Nichols appear to be silent to a gripping force aid means that presses the respective clips in the closed direction to increase the gripping force. However,

Art Unit: 1732

it is submitted that it would have been obvious to provide closing means in view Nichols' clip providing a clamping action only when closed.

Additionally, it is noted that these limitations appear to be drawn to the particular apparatus, which does not appear to materially affect the claimed method.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the methods of Signaigo, Nichols, and Sakamaki into that of Hyman in order to provide a highly efficient light-polarizing film having water, solvent, and scratch resistance, stiffness, and lacking the need to for stiffening laminations (Signaigo, 1:33-43), provide a transverse stretching apparatus which is simple, effective, and suitable to films which are difficult to hold (Nichols, 3:52-54), and in order to resolve the problems of creases, wrinkles, or surface unevenness (Sakamaki, page 1, par. [0008] and par. [0009]). Additionally, it would have also have been obvious to combine the method of Signaigo with that of Hyman and orient after the processing bath because oriented sheets lose their orientation and polarization properties rapidly on exposure to water (1:10-15), and Hyman teaches at least one water processing step (2:44-4:46). **As to Claim 2**, Hyman teaches a draining member disposed at an exit of at least the first processing bath when there are plural processing baths (Fig. 1, Item 18). **As to Claim 3**, Hyman additionally teaches a draining member at the exit of the last processing baths (3:24). **As to Claim 6**, Hyman (6:16) and Signaigo (2:24) both teach PVA films. **As to Claim 21**, the particular apparatus would have been prima facie obvious over Sakamaki and/or Nichols. For instance, Nichols teaches parallel rails (at the point of rollers, 21), a width at exit that is greater than the entrance. Although silent to the inclination, Sakamaki teaches this aspect (Fig. 2). **As**

Art Unit: 1732

to **Claim 22**, see Nichols' U shape (Fig. 3), and the flapper can be interpreted to be the pin holding items 23 and 28 together (Fig. 3). As to **Claims 23-25**, the claimed apparatus does not appear to distinguish the inventive method from the prior art. However, Nichols apparatus provides or renders obvious the claimed features pertaining to the apparatus.

3. **Claims 4 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hyman (USPN 2445579) in view of Signaigo (USPN 2444712), Sakamaki (US Patent Application Publication 2002/0008840), and Nichols (USPN 3254148), and further in view of Moshrefzadeh (US Patent Application Publication 2001/0055153). Hyman, Signaigo, Sakamaki, and Nichols teach the subject matter of Claim 1. See the rejection of Claim 1 under 35 USC 103(a). As to **Claim 4**, Hyman teaches a dyeing bath (Fig. 1, Item 16) and a hardening bath (Fig. 1, Item 22), but appears to be silent to a cleaning bath. However, Moshrefzadeh teaches a cleaning bath to remove plasticizers (Page 5, Par. 67). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Moshrefzadeh into that of Hyman, Signaigo, Sakamaki, and Nichols in order to remove plasticizers and other contaminants which could inhibit dye uptake. As to **Claim 5**, Hyman teaches the dyeing bath and hardening bath in order (See Fig. 1), but is silent to a cleaning step prior to dyeing. However, Moshrefzadeh teaches the claimed order (Page 5, Par. 67). Signaigo teaches that orienting be performed after the dyeing and borating (2:1-8).

4. **Claim 26** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hyman (USPN 2445579) in view of Signaigo (USPN 2444712), Sakamaki (US Patent Application Publication

Art Unit: 1732

2002/0008840), and Nichols (USPN 3254148), and further in view of Lacey (USPN 5932150).

Hyman, Signaigo, Sakamaki, and Nichols teach the subject matter of Claim 25. See the rejection of Claim 25 under 35 USC 103(a). **As to Claim 26**, Hyman, Signaigo, Sakamaki, and Nichols appear to be silent to heating in the entrance portion and midway portion. However, Lacey teaches that the whole process can be conducted in an annealing oven (6:66-7:4 and Fig. 1, Item 28). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Lacey into that of Hyman, Signaigo, Sakamaki, and Nichols because doing so would make the film easier to orient.

5. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hyman (USPN 2445579) in view of Signaigo (USPN 2444712), Sakamaki (US Patent Application Publication 2002/0008840), and Nichols (USPN 3254148), Moshrefzadeh (US Patent Application Publication 2001/0055153), and Schuler (USPN 4166871). **As to Claim 7**, Hyman teaches an orienting method for an optical polymer film comprising:

c) dyeing the polymer film with a dyeing fluid contained in a dyeing bath through which the polymer continuously passes (2:28-43)

d) removing the dyeing fluid existing on both surfaces of the film, with draining blades disposed near a film exit of the dyeing bath (Fig. 1, Item 18 and 2:45-50)

e) hardening the polymer film with a hardening fluid contained in a hardening bath through which the polymer film continuously passes (3:33-46 and 2:48-3:5)

f) removing the fluid existing on both surfaces with draining blades (3:22-26)

Art Unit: 1732

Hyman is silent to:

- a) cleaning the film prior to dyeing
- b) removing the cleaning fluid with draining blades
- f) removing the hardening fluid on both surfaces
- g) orienting the hardened polymer film in the air
- h) the claimed tenter apparatus

However, these aspects would have been prima facie obvious for the following reasons:

- a) Moshrefzadeh teaches a cleaning bath to remove plasticizers (Page 5, Par. 67).
- b) It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use Hyman's wiping blades to remove Moshrefzadeh's cleaning solution in order to avoid diluting the dyeing bath. Additionally, Hyman teaches that after the washing step (item 25 in the figure), the sheet should be dried in any desirable way, such as by wiping or exposure to air (3:14-26), which appears to suggest a drying step immediately after the washing bath and prior to rolling of the film.
- f) Schuler teaches a second wiping station for removing the borating hardening solution (4:44-54). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use Hyman's wiping blades for the same purpose. Additionally, Signaigo teaches that after the washing step (item 25 in the figure), the sheet should be dried in any desirable way, such as by wiping or exposure to air (3:14-26), which appears to suggest a drying step immediately after the washing bath and prior to rolling of the film.
- g) Signaigo teaches orienting the hardened polymer film in air (2:1-7).



h) Sakamaki teaches a stretching method for a polarizing film using a tenter apparatus, but appears to be silent to the clips. However, Nichols teaches (Figs. 1-3) the conventional aspects of a tenter apparatus, namely a plurality of clips movable in a closed and open direction, the clips gripping a lateral edge of a polymer film, releasing when moving in an open direction, first and second movement means oppositely disposed, the respective endless moving means holding the clips at predetermined intervals and moving at a constant speed, first and second rails to form a conveyance passage defining a movement locus (inherent).

It is noted that Sakamaki and Nichols appear to be silent to a gripping force aid means that presses the respective clips in the closed direction to increase the gripping force. However, it is submitted that it would have been obvious to provide closing means in view Nichols' clip providing a clamping action only when closed.

Additionally, it is noted that these limitations appear to be drawn to the particular apparatus, which does not appear to materially affect the claimed method.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the methods of Moshrefzadeh, Schuler, Signaigo, Nichols, and Sakamaki into that of Hyman in order to a) remove plasticizers and other contaminants which could inhibit dye uptake, b) efficiently remove the borating solution and prevent fouling of the equipment and c) provide a highly efficient light-polarizing film having water, solvent, and scratch resistance, stiffness, and lacking the need to for stiffening laminations (Signaigo, 1:33-43), provide a transverse stretching apparatus which is simple, effective, and suitable to films which are difficult to hold (Nichols, 3:52-54), and to resolve the problems of creases, wrinkles,

Art Unit: 1732

or surface unevenness (Sakamaki, page 1, par. [0008] and par. [0009]). Additionally, it would have also have been obvious to combine the method of Signaigo with that of Hyman and orient after the processing bath because oriented sheets lose their orientation and polarization properties rapidly on exposure to water (1:10-15), and Hyman teaches at least one water processing step (2:44-4:46).

### *Response to Arguments*

6. Applicant's arguments filed 25 November 2005 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

- a) Hyman is silent to draining blades within 10 seconds after passing through the respective processing baths according to the conveyance speed of the PVA film.
- b) Lepoutre fails to suggest the full set of features recited by the present claims.

7. These arguments are not persuasive for the following reasons:

- a) Hyman teaches either wiping or exposure to air as methods for drying the washed sheet (3:22-26), and also teaches wiping (draining) blades (2:44-48) on both sides of the film (Item 18 in the figure). In view of these teachings, it is submitted that Hyman clearly suggests to the ordinary artisan that the film be drained at the claimed step of the process. One of ordinary skill would have found it obvious to do so in order to avoid mixing components from different baths, to remove water from the film before rolling it, or to *rapidly remove the washing bath because contact with the wash bath material for more than ten seconds can cause hydrolysis and dissolving of the boric acid from the sheet* (3:13-22).

b) The tenter apparatus which is now claimed in the method appears to be conventional. In particular, the step of inclination (Claim 21) appears to be taught by the method of Sakamaki (Fig. 2). Sakamaki appears to specifically suggest the method (pars. [0002]-[0007]) for PVA films such as those of Hyman (2:11-27), and thus the combination appears to be valid. Nichols is relied upon for teaching of the obviousness of the clips, which are similar to the inventive clips (Fig. 4).

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 7:30 am - 5:30 pm.

Art Unit: 1732

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJD 2/8/06



**MICHAEL P. COLAIANNI**  
**SUPERVISORY PATENT EXAMINER**